REMARKS

Applicants' present this Supplemental Amendment to correct their inadvertent error in not presenting original claim 18 in their presentation of the "Amendments to the Claims" section of its response filed December 23, 2004. No new matter has been added. Accordingly, in this Supplemental Amendment, claims 1, 17 and 24 have been amended.

The Examiner rejected claims 1-9 and 12-29 under 35 U.S.C. 102(e) as being anticipated by Sato (U.S. Patent No. 6,560,369). The rejection of these claims on this basis is traversed. In particular, Sato fails to teach or suggest "the inverse quantization is integrated into the IDWT process," as claimed in claims 1, 17 and 24.

In particular, the present invention provides for integrating the "inverse" process of the uniform scalar quantization and the multilevel discrete wavelet transforms (DWT) during the filter process. As noted in the specification:

> Fig. 5 is a block diagram illustrating a typical frame difference process with a feedback loop in order to perform video compression. As illustrated by the block diagram in the forward path, a DWT operation and a quantization operation are respectively applied by blocks 510 and 520. This corresponds to the approach normally taken to perform compression, as previously described. Therefore, a method of quantizing signal samples of an image during image compression in accordance with the invention described in the aforementioned related patent application, as previously described, may be employed. Nonetheless, Fig. 5 further illustrates the application of an inverse quantization operation 530 and an inverse DWT 540 (IDWT). *It would be desirable to have the ability to combine both the inverse quantization operation and the inverse DWT operation, such as the one provided in the feedback loop illustrated by 535 for the inverse DWT and inverse quantization operations, for example.* In addition to the advantages previously described of applying the previously described embodiment to the forward loop in place of 510 and 520 by combining them, advantages are also gained by similarly combining 530 and 540. This would further simplify and reduce the size of the circuit implementing the compression operation illustrated by Fig. 5 and, likewise, where the implementation is performed in software, a reduction in computation time may result.
>
> In this particular embodiment of a method of inverse quantizing quantized signal samples of an image during image decompression in accordance with the present invention, a process to transform the quantized signal samples from the first domain, such as the frequency domain, to a second domain, such as the spatial domain is applied. During the transformation process, quantized signal

samples are filtered by applying scaled or pre-scaled filter coefficients, in this particular embodiment. *The signal samples are first filter along the image in a first direction by applying scaled or pre-scaled filter coefficients, such as column-wise, and then the signal samples are filtered along the image in a second direction such as row-wise, by applying scaled or pre-scaled filter coefficients, so that at the completion of the transformation process of the image, the transformed signal samples are inverse quantized.*

Sato in fact teaches away from the invention in that any inverse uniform quantization is not integrated into multilevel DWT computation. In particular, the inverse quantization and DWT computations are performed separately, not integrated. As noted in the present application, this may result in a relatively high amount of computational complexity or, alternatively, in some cases, employ separate pieces of circuitry to perform separate operations. Separating these operations in this manner, therefore, may result in lower performance in terms of speed and/or greater expense in terms of the amount of size of the silicon die where, for example, the operation is implemented through circuitry on an integrated circuit.

The above is believed sufficient to overcome the Examiner's rejection, although it is believed that there are other limitations in the claims that the cited patent also fails to meet. It is therefore respectfully requested that the Examiner withdraw his rejection as to these claims.

CONCLUSION

It is respectfully asserted that all of the claims pending in this patent application are in condition for allowance. If the Examiner has any questions, he is invited to contact the undersigned at 310-252-7605. Reconsideration of this patent application and early allowance of all the claims is respectfully requested.

Claims 1-31 are pending in the application. No claims have been added.

The required fee for a three (3) month extension of time is enclosed. No additional fees are required for additional claims. Should it be determined that an additional fee is due under 37 CFR §§1.16 or 1.17, or any excess fee has been received, please charge that fee or credit the amount of overcharge to deposit account #02-2666.

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Respectfully submitted,

Dated: <u>February 12, 2004</u>   By _____

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<u>*CERTIFICATE OF MAILING*</u>

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, Post Office Box 1450, Alexandria, Virginia 22313-1450 on <u>February 12, 2004.</u>

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Margaux Rodriguez   *February 12, 2004*